



Louisville Metro Air Pollution Control District
701 West Ormsby Avenue, Suite 303
Louisville, Kentucky 40203-3137



November 19, 2018

Federally Enforceable District Origin Operating Permit Statement of Basis

Source: Brown-Forman Distillery
2921 Dixie Highway
Louisville, KY 40216

Owner: Brown-Forman Corporation
850 Dixie Highway
Louisville, KY 40201-1080

Application
Documents:

See Table 8 in Section I

Public Comment Date: 17 October 2018

Permitting Engineer: Jenny Rhodes

Permit Number: O-0244-18-F

Plant ID: 0244

SIC: 2085

NAICS: 312140

Introduction:

This permit will be issued pursuant to District Regulation 2.17- *Federally Enforceable District Origin Operating Permits*. Its purpose is to limit the plant wide potential emission rates from this source to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements.

This permit action limits PM/PM₁₀ to 100 tpy. This action also updates the equipment lists.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO₂), carbon monoxide (CO), 1 hr and 8 hr ozone (O₃), particulate matter less than 10 microns (PM₁₀); and unclassifiable for the 2012 standard for particulate matter less than 2.5 microns (PM_{2.5}) and partial non-attainment area for sulfur dioxide (SO₂).

Permit Application Type:

☒ Initial issuance

Permit Revision

☐ Permit renewal

☐ Administrative

☐ Minor

☐ Significant

Compliance Summary

☒ Compliance certification signed

☐ Compliance schedule included
Source is operating in
compliance

☐ Source is out of compliance

☒

I. Source Information

1. **Product Description:** Brown-Forman Distillery produces a variety of distilled spirits.
2. **Process Description:** Grain, generally consisting of corn, rye, and malted barley, is received, cleaned, and milled. The milled grain is mixed with water and cooked to produce mash. The mash is mixed with yeast to ferment the mixture. The fermented mixture is processed in a column still to concentrate the alcohol. The spent grains are dried and sold as animal feed. The alcohol is discharged from the stills into tanks, located in the cistern room. This raw whiskey is diluted by adding filtered water to achieve the proper proof prior to transfer to barrels. The filled barrels are transported to warehouses for storage while the whiskey matures. The matured whiskey is then drained from the barrels and the barrels are rinsed. The matured whiskey is stored in stainless steel tanks, loaded on tank trucks, and transported off-site. Barrels of whiskey are also received from other distilleries for storage and maturation; these barrels are then shipped back off-site once the maturation period is complete.

On a separate low-alcohol bottling line, beverage alcohol is transported to the facility by tank truck and off-loaded into storage tanks. Various flavorings and additives are mixed with the beverage alcohol in blending tanks. The processed beverage is carbonated, bottled, labeled, and packaged.

3. **Site Determination:** There are no other facilities that are contiguous or adjacent to this facility.
4. **Emission Unit Summary:**

Emission Unit	Equipment Description
U1	Grain Handling Operation: Grain (corn, rye, and malted barley) is received by either railroad car or truck. After cleaning, the grain is transferred to temporary storage until it is milled. Milling breaks the outer protective wall of the grain kernel, exposing the internal starchy structure. From the mills, the grain is transferred to smaller storage bins, awaiting the next step in the process. Grain mashing involves cooking the grains in water and mixing with malt to convert the soluble starches in the grain to "grain sugar."
U1A	Fermentation & Distillation: Fermentation converts the grain sugars to ethanol and CO ₂ after the mash is mixed with yeast. The fermentation process normally is completed in three to five days. After the fermentation process is complete, the grain/alcohol mixture (now called "beer") is agitated to suspend the solids and pumped to the "beer well" for temporary storage before distillation.
U2	Barrel Filling Operations: Following the mashing, fermentation and distillation processes, the distillate is transferred into stainless steel cistern tanks and diluted with filtered water to the desired alcohol concentration. From the cistern tanks, the distilled spirits are transferred to the barreling operation and loaded into wooden barrels or loaded into tank trucks for shipment off-site.

Emission Unit	Equipment Description
U2A	Barrel Dumping Operations: After aging, the whiskey is removed from the barrels, stored in stainless steel cistern tanks, mixed with filtered water to the desired alcohol concentration, and loaded in tank trucks for transfer to an off-site bottling facility. Barrels of mature whiskey are also transported off-site via truck.
U3	By-products Processing and Handling: Whole stillage from the bottom of the distillation columns is passed through a set-back screen to separate the grain (thick) stillage from the liquid (thin) stillage. The thick stillage is loaded into a storage tank prior to being transferred into a paddle screen and rotary press for further separation. The thick stillage then enters a rotary dryer to drive off the remaining moisture. The Distillers Dried Grain is then loaded into a by-products storage tank prior to being conveyed onto trucks for off-site shipment. The thin stillage is pumped from the set-back and paddles screens into the backset storage tanks for subsequent use in the mashing units. Thin stillage overflow is pumped into one of the thin stillage storage tanks. This thin stillage then enters a steam-heated evaporator that concentrates the stillage by driving off the moisture, and is transferred into the bulk syrup tank. The dried product (Solubles) is transferred via cyclones to a final cyclone that conveys the material to storage.
U4	Power Generation: The company operates one natural gas 90 MMBtu/hr boiler (Boiler #1) and one 55 MMBtu/hr natural-gas fired boiler (Boiler #2.) These boilers are used to generate process steam. Steam generated by the boilers is used in the mashing units, distillation columns, multiple-effect evaporators, steam tube dryers, the low-alcohol bottling line, and the warehouse.
U5	Low Alcohol Beverage Line: The Company operates a bottling line to produce a 5% alcohol product. Beverage alcohol and other ingredients are blended on site prior to bottling. Finished goods are shipped from this location.
U6	Whiskey Maturation Warehouses: The barrels are transported from the barreling operations to maturation warehouses and stored for a period of three to ten years to allow maturation. Matured barrels are removed from the warehouses and either taken to the dump room where the whiskey is drained, or transferred off-site via truck.
UIA-1	Cooling Towers: Two (2) induced draft cooling towers
UIA-2	Blast Cabinets: Two (2) blast cabinets using glass bead shot
UIA-3	Emergency Generators: One diesel fired emergency generator and one natural gas fired emergency generator

5. **Fugitive Sources:** Fugitive sources include VOC emissions from the warehouse and ethanol production process and PM emissions from the grain handling.

6. Permit Revisions:

Permit No.	Public Notice Date	Issue Date	Change Type	Description/Scope
136-97-TV	01/22/2001	09/24/2000	Initial	Initial Permit Issuance
136-97-TV(R1)	06/01/2012	03/04/2012	Renewal	Permit renewal; Incorporation of construction permits 109-00-C, 43-02-C, 350-05-C, 351-05-C, 352-05-C, 189-06-C, 313-08-C, and 314-08-C.
O-0244-18-F	10/17/2018	11/19/2018	Initial	Initial FEDOOP Issuance and incorporation of 314-08-C(R1)

7. Construction Permit History:

Permit No.	Issue Date	Description
314-08-C(R1)	09/07/2018	Modification to convert existing coal fired Boiler #1 (E26) to burn only natural gas

8. Permit Renewal-Related Documents

Document Number	Date Received	Description
38951	05/10/2012	Application for 230 kW diesel emergency generator
39308	05/18/2012	Letter from District to the company stating that a permit is not required for the 230 kW diesel generator
72879	08/06/2015	EPA Exhaust Emission Data Sheet for 60W Natural Gas Emergency Generator
77787	10/09/2015	Letter from the District to the company that the 60W natural gas emergency generator on the construction permit application received August 6 is an insignificant activity (I.A.)
80989	12/22/2016	Title V Permit Renewal Application
81039	12/28/2016	Certificate of Authority
81392	01/20/2017	Notice of Deficiency letter from APCD regarding incomplete Title V Application
82014	02/20/2017	Company response to Notice of Deficiency regarding incomplete Title V Application
77686	02/20/2017	“Administratively complete” verification letter from APCD
84510	06/14/2017	Correspondence regarding welding
84726	06/14/2017	Correspondence regarding tanks equipped with submerged fill

Document Number	Date Received	Description
84823	06/16/2017	Parts washer MSDS/SDS
84880	06/21/2017	Correspondence regarding the size of I.A. tanks
85247	7/14/2017	Correspondence requesting the potential to emit calculations to be revised
86053	8/17/2017	Company's plantwide PTE
89373	12/1/2017	Visible emission survey records for Emission Unit U1
92158	5/18/2018	Application to convert coal fired boiler #1 to natural gas only and 100 tpy synthetic minor PM ₁₀ limit.
92530	5/21/2018	Additional Forms AP-100B, AP-100C, AP-100D, AP-100H, AP-200E to supplement the 5/18/2018 application.
92618	6/19/2018	Revised Form AP-100A
92626		

9. Emission Summary:

Pollutant	District Calculated Actual Emissions (ton/yr) 2016 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	38.8	No
NO _x	63.99	No
SO ₂	171.32	No
PM ₁₀	20.60	*No
VOC	1741	No
Total HAPs	8.85	No
Single HAP		
HCl	7.66	**No
HF	0.957	No
Cyanide	0.016	No
Benzene	0.0085	No

* The source has accepted synthetic minor limits for PM/PM₁₀.

** The company has converted coal fired Boiler #1 to natural gas.

10. Applicable Requirements

- | | | |
|---|---|---|
| <input checked="" type="checkbox"/> 40 CFR 60 | <input checked="" type="checkbox"/> SIP | <input checked="" type="checkbox"/> 40 CFR 63 |
| <input type="checkbox"/> 40 CFR 61 | <input checked="" type="checkbox"/> District Origin | <input type="checkbox"/> Other |

11. Referenced MACT Federal Regulations:

40 CFR 63 Subpart ZZZZ - *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

12. Referenced non-MACT Federal Regulations:

40 CFR 60 Subpart Dc - *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*

40 CFR 60 Subpart IIII - *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*

40 CFR 60 Subpart JJJJ - *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*

13. Removed/Dismantled Equipment

The following equipment will either be removed or dismantled in place:

- Dehydrators 1 through 4 and associated cyclones
- Scrubber C7
- All coal handling equipment:
 - Coal unloading pit,
 - Coal screw conveyor from coal receiving to bucket elevator,
 - Bucket elevator from coal receiving screw conveyor to coal silo screw conveyor,
 - Coal screw conveyor from bucket elevator to coal silo,
 - Coal storage silo, and
 - Coal screw conveyor from coal silo to bunker.
- All fly ash handling equipment:
 - Coal ash (fly and bottom) storage silo and
 - Coal ash handling.
- Baghouse C11
- Bin vent filters C12 and C13
- Parts washers

II. Regulatory Analysis

1. **Acid Rain Requirements:** Brown Forman Distillery is not subject to the Acid Rain Program.
2. **Stratospheric Ozone Protection Requirements:** Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. Brown Forman Distillery does not manufacture, sell, or distribute

any of the listed chemicals. The source's use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.

- 3. Prevention of Accidental Releases 112(r):** Brown Forman Distillery does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, *Chemical Accident Prevention Provisions*, in a quantity in excess of the corresponding specified threshold amount.

4. Basis of Regulation Applicability

a. Plantwide

Brown Forman Distillery is a potential major source for the pollutant PM₁₀. Regulation 2.17 – *Federally Enforceable District Origin Operating Permits* establishes requirements to limit the plant wide potential emission rates to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements. The source requested limits of the criteria pollutant PM₁₀ < 100 ton/yr.

Regulations 5.00 5.20, 5.21, and 5.23 (STAR Program) establishes requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards.

Regulation 2.17, section 5.2, requires monitoring and record keeping to assure ongoing compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a minimum of 5 years and make the records readily available to the district upon request.

Regulation 2.17, section 7.2, requires stationary sources for which a FEDOOP is issued to submit an Annual Compliance Certification by April 15, of the following calendar year. In addition, as required by Regulation 2.17, section 5.2, the source shall submit an Annual Compliance Report to show compliance with the permit, by March 1 of the following calendar year. Compliance reports and compliance certifications shall be signed by a responsible official and shall include a certification statement per Regulation 2.17, section 3.5.

The following equipment has no emissions of regulated pollutants:

EU U1A, Two Donut tubs (26 and 300 gallons)
EU U1A, Mash Cookers 1, 2 and 3
EU U1A, Yeast Cooker 1
EU U1A, Seven Yeast Tubs/Tanks, 1,500 gal each
EU U1A, Four Yeast Tubs/Tanks, 2,250 gal each

EU U1A, ST-1, #1 Still equipped with a low wine condenser
 EU U1A, ST-2, #2 Still equipped with a low wine condenser
 EU U1A, DB-1, Doubler/Thumper with high wine condenser for the #1 Still
 EU U1A, DB-2, Doubler/Thumper with high wine condenser for the #2 Still
 EU U3, Combined Expansion Cyclone (Unit provides a “wide spot” to feed the fan. No material is collected or controlled by this unit)
 EU U3, Two (2) Syrup Holding Tanks
 EU U3, Three (3) Treated Water Storage Tanks, 4,000 gallons each

b. Emission Unit U1 – Grain Handling Operations

i. Equipment:

Emission Point	Description	Applicable Regulation	Installation Date
E1	Truck/Rail Receiving – All Grain	6.09	1968
E3-1i	Two (2) grain screw conveyors from receiving pit to shaker/grain cleaner	6.09	Pre-1976
E3-1ii			
E3a	Grain Cleaner/Shaker	6.09	Pre-1976
E3-2	Grain screw conveyor from shaker to bucket elevator	6.09	Pre-1976
E3-3	Bucket elevator from grain screw conveyor to silos	6.09	Pre-1976
E3-4i	Two (2) grain screw conveyors from bucket elevator to Silos	6.09	Pre-1976
E3-4ii			
E2a	Corn Storage Silo #1	6.09	1957
E2b	Corn Storage Silo #2		1957
E8a	Small Grain (Malt) Storage Silo #1	6.09	1968
E8b	Small Grain (Wheat & Rye) Storage Silo (split compartment inside) #2		1968
E3-5	Interior Corn Screw Conveyor from silo to corn cage mill	6.09	Pre-1976
E3-6	Small grain (Malt & Rye) screw conveyor from silo to small grain cage mill	6.09	Pre-1976
E4	Corn Cage Mill	6.09	Pre-1976
E10	Small Grain (Malt & Rye) Cage Mill	6.09	Pre-1976
E3-7i	Screw conveyor from corn cage mill to bucket elevator	6.09	Pre-1976
E3-8i	Screw Conveyor from small grain cage mill to bucket elevator	6.09	Pre-1976
E3-7ii	Bucket Elevator from screw conveyor to corn meal bins	6.09	Pre-1976
E3-8ii	Bucket elevator from screw conveyor to small grain meal bins	6.09	Pre-1976
E5a	Internal Grain (Corn) Storage Bin #1	7.08	Post-1976
E5b	Internal Grain (Corn) Storage Bin #2		Post-1976

Emission Point	Description	Applicable Regulation	Installation Date
E11a	Four (4) Internal Small Grain Storage Bins (Mash Rye Bin, Yeast Rye Bin, Mash Malt Bin, and Yeast Malt Bin)	7.08	Post-1976
E11b			Post-1976
E11c			Post-1976
E11d			Post-1976
E6	Gravity feed from corn meal storage bins to corn weigh hopper	6.09	Pre-1976
E12a	Gravity feed from storage bins to slurry weigh hopper	6.09	Pre-1976
E12	Gravity feed from storage bin to yeast cooker hopper	6.09	Pre-1976
E3-12i	Two (2) interior screw conveyors from corn weigh hopper to cookers ¹	6.09	Pre-1976
E3-12ii			
E3-13	Interior screw conveyor from slurry weigh hopper to slurry tank ²	6.09	Pre-1976
E3-14	Gravity feed from yeast weigh hopper to yeast cooker	6.09	Pre-1976

ii. **Standards/Operating Limits**

1) **Opacity**

- (a) Regulation 6.09, section 3.1 establishes an opacity standard of less than 20%, for processes that existed or commenced construction on or before September 1, 1976.
- (b) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%, for processes that commenced construction after September 1, 1976.

2) **PM/PM₁₀**

- (a) Regulation 6.09, section 3.2 establishes PM standards for process equipment.
- (b) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment.

¹ The two conveyors are “T” shaped. The first conveyor feeds the second conveyor. The second conveyor feeds all three cookers.

² From the slurry tank, liquid is pumped to the mash cookers; therefore, after the slurry tank, the process is no longer a PM source.

b. **Emission Unit U1A – Fermentation & Distillation**i. **Equipment:**

Emission Point	Description	Applicable Regulation	Installation Date
E40a	Fermentation Tank (42,000 gal)	6.24 and 1.05	1968
E40b	Fermentation Tank (42,000 gal)		1968
E40c	Fermentation Tank (42,000 gal)		1968
E40d	Fermentation Tank (42,000 gal)		1968
E40e	Fermentation Tank (42,000 gal)		1968
E40f	Fermentation Tank (42,000 gal)		1968
E40g	Fermentation Tank (42,000 gal)		1968
E40h	Fermentation Tank (42,000 gal)		1968
E40i	Fermentation Tank (42,000 gal)		1968
E40j	Fermentation Tank (42,000 gal)		1968
E40k	Fermentation Tank (42,000 gal)	6.24 and 1.05	1968
E40l	Fermentation Tank (42,000 gal)		1968
E41	Beer Well Tank (50,000 gal) (I.A.)		1960s
ST-1	#1 Still equipped with a low wine condenser		1960s
ST-2	#2 Still equipped with a low wine condenser		1960s
DB-1	Doubler/Thumper with high wine condenser for the #1 Still		1960s
DB-2	Doubler/Thumper with high wine condenser for the #2 Still	6.13 and 1.05	1960s
E42	Heads and Tails Tank (1,200 gal) equipped with submerged fill. (I.A.)		1960s

ii. **Standards/Operating Limits****VOC**

- 1) Regulation 6.13 establishes requirements for each storage vessel greater than 250 gallons installed before September 1, 1976.
- 2) Regulation 6.24 applies to each machine, equipment, or other contrivance used for employing or applying any organic material.

c. **Emission Unit U2 – Barrel Filling Operation**i. **Equipment:**

Emission Point	Description	Applicable Regulation	Installation Date
E13	Cistern Tank (30,000 gal) (I.A.)	6.13 ³ and 1.05	1966
E14	Cistern Tank (30,000 gal) (I.A.)		1966
E15	Cistern Tank (30,000 gal) (I.A.)		1966
E16	Cistern Tank (30,000 gal) (I.A.)		1966
E52	Bulk Loadout Station (I.A.)	6.22 and 1.05	1960s

ii. **Standards/Operating Limits****VOC**

- (a) Regulation 6.13 establishes requirements for each storage vessel greater than 250 gallons installed before September 1, 1976.
- (b) Regulation 6.22 applies to each loading facility which loads more than 200 gallons of VOC in a day into tank trucks, trailers, or railroad tank cars that commenced operation before September 1, 1976.

d. **Emission Unit U2A – Barrel Filling Operation**i. **Equipment:**

Emission Point	Description	Applicable Regulation ⁴	Installation Date
E18a	10,000 gallon Bulk Storage Tank (I.A.)	7.12 and 1.05	After 1990
E18b	10,000 gallon Bulk Storage Tank (I.A.)		After 1990
E18c	10,000 gallon Bulk Storage Tank (I.A.)		After 1990
E18d	30,000 gallon Bulk Exterior Storage Tank		After 1990
E18e	30,000 gallon Bulk Exterior Storage Tank		After 1990
E18f	30,000 gallon Bulk Exterior Storage Tank		After 1990
E18g	30,000 gallon Bulk Exterior Storage Tank		After 1990
E18h	7,300 gallon Blending Tank (I.A.)	7.25 and 1.05	After 1990
E18i	7,300 gallon Blending Tank (I.A.)		After 1990
E18j	7,300 gallon Blending Tank (I.A.)		After 1990
E18k	7,300 gallon Blending Tank (I.A.)		After 1990
E18m	7,300 gallon Blending Tank (I.A.)		After 1990
E18n	7,300 gallon Blending Tank (I.A.)		After 1990
E18p	7,300 gallon Blending Tank (I.A.)		After 1990

3 40 CFR 60 Subpart Kb does not apply because the cistern tanks were constructed before July 23, 1984.

4 Per 60.110b(d)(7), 40 CFR 60 Subpart Kb does not apply to vessels used to store beverage alcohol.

Emission Point	Description	Applicable Regulation⁴	Installation Date
E18q	7,300 gallon Blending Tank (I.A.)	7.25 and 1.05	After 1990
E18r	20,000 gallon Blending Tank (I.A.)		After 1990
E53	Truck Loading Rack	7.22 and 1.05	After 1990
E54	Truck Loading Rack		After 1990

ii. **Standards/Operating Limits**

VOC

- 1) Regulation 7.25 establishes a plant-wide VOC limit of 5 tons per year for all affected facilities, unless Best Available Control Technology (BACT) level of control is utilized to reduce the VOC emissions.
- 2) Regulation 7.22 establishes requirements for each loading facility that loads more than 200 gallons in any one day of volatile organic materials into tank trucks, trailers, or railroad tank cars commencing on or after June 13, 1979.
- 3) Regulation 7.12, section 1 applies to each storage vessel for VOC compounds that has a storage capacity greater than 250 gallons that commenced construction or modification on or after April 19, 1972.

e. **Emission Unit U3 – By-Products Process and Handling**

i. **Equipment:**

Emission Point	Description	Applicable Regulation	Installation Date
TKS-1	Thick Stillage Tank (500 gal) (I.A.)	6.13 and 1.05	1960s
SBS-1	Setback Storage Tank (4,000 gal) (I.A.)		1960s
TNS-CT	Thin Stillage Catch Tank (less than 500 gal) (I.A.)		1960s
TNS-1	Thin Stillage Tank 1 (40,000 gal) (I.A.)		1960s
TNS-2	Thin Stillage Tank 2 (40,000 gal) (I.A.)		1960s
TNS-3	Thin Stillage Tank 3 (40,000 gal) (I.A.)		1960s
TNS-4	Thin Stillage Tank 4, Overflow Tank (20,000 gal) (I.A.)		1960s
E31	Rotary Dryer #1	6.09	Pre-1976
E32	Rotary Dryer #2	6.09	Pre-1976
E25	Distillers Dry Grain Storage Tank	7.08	2005
E25i	Screw conveyor for Distillers Dry Grain Storage Tank to main screw conveyor	7.08	Post-1976
E23	Minerals Storage Tank	6.09	Pre-1976

Emission Point	Description	Applicable Regulation	Installation Date
E23i	Screw conveyor for minerals storage tank to main screw conveyor	6.09	Pre-1976
E24	Solubles Storage Tank	6.09	Pre-1976
E24i	Screw conveyor for solubles storage tank to main screw conveyor	6.09	Pre-1976

ii. **Standards/Operating Limits**

1) **Opacity**

- (a) Regulation 6.09, section 3.1 establishes an opacity standard of less than 20%, for processes that existed or commenced construction on or before September 1, 1976.
- (b) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%, for processes that commenced construction after September 1, 1976.

2) **PM/PM₁₀**

- (a) Regulation 6.09, section 3.2 establishes PM standards for process equipment.
- (b) Regulation 7.08, section 3.1.2 establishes PM standards for process equipment.

f. **Emission Unit U4 – Boilers**

i. **Equipment:**

Emission Point	Description	Applicable Regulation	Installation Date
E26	Boiler #1 – Henry Vogt; 90 MMBtu/hr; primary fuel is natural gas	7.06, 40 CFR 6 Subpart Dc, STAR	1965
E27	Boiler #2 – Henry Vogt; 55 MMBtu/hr; natural gas	7.06 ⁵ , STAR	1973

ii. **Standards/Operating Limits**

1) **Opacity**

Regulation 7.06, section 4.2 establishes an opacity limit of less than 20% for indirect heat exchangers constructed on or after April 19, 1972.

2) **PM/PM₁₀**

Regulation 7.06, section 4.1.3 establishes a PM standard for indirect heat exchangers constructed on or after September 1, 1976 of 1 MMBtu/hr or more with a total heat input

5 40 CFR 60 Subpart Dc does not apply because this boiler was installed before June 9, 1989.

capacity of more than 10 million BTU per hour and less than 250 million BTU per hour based on the following equation:

$$\text{PM Standard} \frac{\text{lb}}{\text{MMBTU}} = 1.919(\text{Total Heat Input Capacity MMBTU/hr}^{-0.535})$$

3) **SO₂**

Regulation 7.06, section 5.1.1 establishes an SO₂ standard of 1.0 pound per million BTU actual heat input for the combustion of liquid and gaseous fuels if the source has a total heat input capacity of 145 million BTU per hour or less. The total heat input capacity for indirect heat exchangers subject to Regulation 7.06 is 55 MMBtu/hr.

4) **TAC**

The TAC emissions from the combustion of natural gas are considered to be *de minimis* emissions per Regulation 5.01, section 1.6.7.

iii. **Monitoring/Recordkeeping**

1) **SO₂**

40 CFR 60.48c(g) establishes recordkeeping requirements for natural gas boilers greater than or equal to 10 MMBtu/hr modified after June 9, 1989.

g. **Emission Unit U5 – Low-Alcohol Bottling Line**

i. **Equipment:**

Emission Point	Description	Applicable Regulation	Installation Date
E33	Slurry Tank, 450 gal	7.25 and 1.05	1997
E34	Ingredient Tank, 12,000 gal equipped with bottom fill ⁶	7.12 and 1.05	2005
E35	Batch Tank #1, 10,000 gal (I.A.)	7.12 and 1.05	1997
E36	Batch Tank #2, 10,000 gal (I.A.)		1997
E37	Batch Tank #3, 10,000 gal (I.A.)		1997
E57	Ingredient Tank, 30,000 gal equipped with submerged fill	7.12 and 1.05	1997
E58	Ingredient Tank, 20,000 gal equipped with submerged fill		1997
E59	Ingredient Tank, 10,000 gal equipped with submerged fill		1997
E60	Ingredient Tank, 7,000 gal		1997

⁶ The District has determined that “bottom fill” is equivalent to “submerged fill.”

Emission Point	Description	Applicable Regulation	Installation Date
E61	Ingredient Tank, 10,490 gal		1997
E62a	Bottle Filler and a 250 gallon buffer tank, 28,395,200 gal/yr	7.25 and 1.05	1997

ii. **Standards/Operating Limits**

VOC

- 1) Regulation 7.25 establishes a plant-wide VOC limit of 5 tons per year for all affected facilities, unless Best Available Control Technology (BACT) level of control is utilized to reduce the VOC emissions.
- 2) Regulation 7.12, section 1 applies to each storage vessel for VOC compounds that has a storage capacity greater than 250 gallons that commenced construction or modification on or after April 19, 1972.

h. **Emission Unit U6 – Barrel Storage and Aging Warehouse**

i. **Equipment:**

Emission Point	Description	Applicable Regulation	Installation Date
E64a, E64b, E64c, E64d	Barrel Filling (4 filling stations)	1.05	1960s
E17 -B	Barrel Storage Warehouse (8 warehouses, labelled B, G, H, I, J, K, L, and O)	1.05	1960s
E17 -G			
E17 -H			
E17 -I			
E17 -J			
E17 -K			
E17 -L			
E17 -O			
E63a through E63j	Barrel Dumping (10 dump stations)	1.05	1960s

ii. **Standards/Operating Limits**

VOC

Regulation 1.05 applies to all sources emitting VOCs in quantities equal to or greater than 100 tons per year.

i. **Emission Unit UIA-1 – Cooling Towers**i. **Equipment:**

Emission Point	Description	Applicable Regulation
CT-1	Cooling Tower (Induced Draft)	7.08
CT-2	Cooling Tower (Induced Draft)	

ii. **Standards/Operating Limits**1) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%, for processes that commenced construction after September 1, 1976.

2) **PM/PM₁₀**

Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.

j. **Emission Unit UIA-2 – Blast Cabinets**i. **Equipment:**

Emission Point	Description	Applicable Regulation
BC-1	Two (2) blast cabinets using glass bead shot, 1265 lb/hr	7.08
BC-2		

ii. **Standards/Operating Limits**1) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%, for processes that commenced construction after September 1, 1976.

2) **PM/PM₁₀**

Regulation 7.08, section 3.1.2 establishes PM standards for process equipment. Per Table 1 to Regulation 7.08, the maximum allowable emission rate is 2.34 lb PM/hr for equipment with a process weight rate of less than or equal to 1,000 pounds per hour.

k. **Emission Unit UIA-3 – Emergency Generators**i. **Equipment:**

Emission Point	Description	Applicable Regulation
E65	Natural Gas-Fired Emergency Generator, Cummins, Model GGHE, 6.8 liters per cylinder, 60 KW (80.5 HP), 4 stroke spark engine, fuel consumption 861 ft ³ /hr (I.A.)	5.02, 7.02, 40 CFR 60 Subpart JJJJ, 40 CFR 63 Subpart ZZZZ, & STAR

ii. **Standards/Operating Limits**1) **HAP**

40 CFR 63 Subpart ZZZZ establishes requirements for any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile located at an area or major source of HAPs. 40 CFR 63.6490(c) establishes the requirement for any new or reconstructed stationary RICE located at an area source to meet the requirements of 40 CFR 63 Subpart ZZZZ by meeting the requirements of 40 CFR 60 Subpart JJJJ.

2) **TAC**

Natural gas combustion and insignificant activities are *de minimis* for STAR by definition per Regulation 5.21, section 2.7.

3) **Unit Operation (40 CFR 60 Subpart JJJJ)**

40 CFR 60 Subpart JJJJ establishes requirements for owners and operators of spark engines manufactured on or after January 1, 2009 for engines less than 500 HP.

III. Other Requirements

1. **Temporary Sources:** The source did not request to operate any temporary facilities.
2. **Short Term Activities:** The source did not report any short term activities.
3. **Emissions Trading:** N/A
4. **Alternative Operating Scenarios:** The source did not request any alternative operating scenarios.
5. **Compliance History since Last Operating Permit Issuance:** N/A

6. Calculation Methodology or Other Approved Method:

Generally, emissions are calculated by multiplying the throughput (ton, MMCF, gallons, etc) or hours of operation of the equipment by the appropriate emission factor and accounting for any control devices unless otherwise approved in writing by the District.

7. Insignificant Activities

Equipment	PTE (tpy)	Regulation Basis
Diesel Storage Tank 1, 300 gal	0.00028 VOC	Regulation 1.02, Appendix A, 3.9.2
Diesel Storage Tank 2, 550 gal	0.00028 VOC	Regulation 1.02, Appendix A, 3.9.2
Waste Oil Storage Tank, 300 gal	0.00028 VOC	Regulation 1.02, Appendix A, 3.9.2
250 gallon Buffer Tank	0.01 tpy VOC	Regulation 1.02, Appendix A, 3.24
EI Room Furnace, 0.06 MMBtu/hr	0.03 tpy NOx	Regulation 1.02, Appendix A, 1.1
Warehouse Office Furnace, Trane XR80, 0.04 MMBtu/hr	0.04 tpy NOx	Regulation 1.02, Appendix A, 1.1
Warehouse Office Furnace, Trane XE78, 0.06 MMBtu/hr	0.03 tpy NOx	Regulation 1.02, Appendix A, 1.1
Warehouse Office Hot Water Heater, AO Smith ProMax, 0.04 MMBtu/hr	0.02 tpy NOx	Regulation 1.02, Appendix A, 1.1
Warehouse Office Hot Water Heater, AO Smith ProMax, 0.51 MMBtu/hr	0.22 tpy NOx	Regulation 1.02, Appendix A, 1.1
Welding Station 1	0.13 tpy PM/PM ₁₀ /PM _{2.5}	Regulation 1.02, Section 1.38.1.2.1
Welding Station 2	0.13 tpy PM/PM ₁₀ /PM _{2.5}	Regulation 1.02, Section 1.38.1.2.1
Lab 1 ⁷	0.69 tpy VOC	Regulation 1.02, Appendix A, 3.27
Truck Loading (E55) (only liquid stillage and syrup)	0.04 tpy VOC	Regulation 1.02, Section 1.38.1.2.1.

- 1) Insignificant activities identified in District Regulation 1.02, Appendix A, may be subject to size or production rate disclosure requirements.
- 2) Insignificant activities identified in District Regulation 1.02, Appendix A shall comply with generally applicable requirements.
- 3) The owner or operator shall annually submit an updated list of insignificant activities that occurred during the preceding year, with the compliance certification due April 15th.
- 4) Emissions from Insignificant Activities shall be reported in conjunction with the reporting of annual emissions of the facility as required by the District.
- 5) The owner or operator may elect to monitor actual throughputs for each of the insignificant activities and calculate actual annual emissions, or use Potential to Emit (PTE) as the annual emissions for each piece of equipment.
- 6) The District has determined that no monitoring, record keeping, or reporting requirements apply to the insignificant activities listed, except for the equipment that has an applicable regulation and permitted under an insignificant activity (IA) unit.

⁷ Lab 2 (Still Floor Lab) only includes mash balling (sugar measurement) and pH testing and does not emit any regulated emissions.